START

In a transmitter apparatus, generate an encoded and modulated signal from a digital input signal and also generate a data indicator signal corresponding to the encoded and modulated signal.

Convert the encoded and modulated signal into an analog transmit signal.

Select, in response to the data indicator signal, an output peak to average power ratio signal value from an array of peak to average power ratio signal values each having a corresponding data rate or data format.

Generate a desired transmit power level signal value.

Generate an automatic gain control amplifier signal in response to the desired transmit power signal value.

Sum the desired transmit power level signal value and peak to average power ratio signal value to generate a peak transmit power level signal value.

Continuously map the value of the peak transmit power level signal to a value of at least one control signal for at least one device within the transmitter apparatus that controls at least one parameter within the transmitter apparatus to achieve an optimized power efficiency of the transmitter apparatus while still meeting out of band spurious emissions and waveform quality requirements.

Where the control signal is a digital signal, convert the control signal to an analog signal prior to adjusting the at least one parameter of the at least one device within the transmitter apparatus.

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FIG. 5